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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,624	07/27/2001	Jenkin A. Richard	2200P	9445

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SAWYER LAW GROUP LLP
P O BOX 51418
PALO ALTO, CA 94303

EXAMINER
FULLER, RODNEY EVAN

ART UNIT	PAPER NUMBER
2851	

DATE MAILED: 07/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/916,624	RICHARD ET AL.	
	Examiner	Art Unit	
	Rodney E Fuller	2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

P riod for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 June 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Dispo ition of Claims

4)☒ Claim(s) *1-83 and 88-90* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-83 and 88-90* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on *23 June 2003* is: a)☒ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Remarks

In response to applicant's Amendment, dated June 23, 2003, the examiner acknowledges the correction of the objection related to the Drawings set forth in the Office Action mailed March 19, 2003.

The examiner acknowledges the cancellation of claims 84-87 and the addition of claims 88-90. Claims 1-83 and 88-90 are pending

The amendments to claims 28-30, 56-58, 81-83 and the cancellation of claims 84-87 have address all the Claim Objections set forth in the Office Action mailed 19, 2003.

During a telephone interview (Interview Summary, mailed June 23, 2003), the examiner indicated that in regards to a proposed amendment that the next Office Action would likely be non-final, since the primary proposed change was the incorporation of a dependent claim (claim 2) into the independent claims. It is noted (claim 1 for example) that claim 1 incorporates only one part of the limitation of claim 2, i.e., "wherein the first OAE comprises two coupled, non-parallel, and non-co-planar surfaces in the first beam path." However, the limitation of claim 2 of "wherein at least one of the surfaces comprises a refractive or defractive element" was not incorporated into claim 1. The limitation was re-written as "wherein at least one of the coupled, non-parallel, and non-co-planar surfaces include a reflective element." After re-review of Oono, the examiner maintains that the structure of Oono will read on the amended claim language. In Oono, elements 13 and 15 may be considered "two coupled, non-parallel, and non-co-planer surfaces in the first beam path, wherein at least one of the coupled, non-parallel, and non-co-planer surfaces include a reflective element." Clearly elements 13 and 15 are "non-parallel, and

non-co-planer in the first beam path" and element 15 is "a reflective element." The limitation that the OAE comprises two coupled surfaces is the only part of the limitation in question. If the limitation is limited to wherein the surfaces are physically joined together, the limitation would differ from the structure shown in Oono. However, reading the claim language in the broadest terms, the examiner maintains that Oono discloses wherein elements 13 and 15 may be moved in a cooperative, paired, partnered, associated, and/or combined manner. Thus, the examiner maintains that Oono discloses the claimed invention and thus the present Office Action is made Final.

Regarding the under 35 U.S.C. 102(b) rejection of claims 1-87 as being anticipated by Oono, et al. (US 5,223,970), the applicant makes the argument (page 25 of Amendment):

> "Oono discloses that element is an anamorphic prism that refracts an incident laser beam, and element is a fixed mirror. Neither element 13 nor element 15, however, disclose aligning a beam path using an OAE comprising two coupled, non-parallel, and non-co-planar surfaces in the beam path, where at least one of these surfaces include a reflective element in the beam path. The anamorphic prism 13 in Oono is a refractive element, not a reflective one. None of the surfaces of the anamorphic prism 13 which are in the beam path includes a reflective element." "The fixed mirror 15 in Oono, although drawn in the shape of a prism, functions as a mirror. Firstly, the fixed mirror 15 is disclosed as 'fixed', not adjustable. Secondly, the fixed mirror 15 is disclosed as having only one reflective surface in the beam path."

The examiner acknowledges that element 13 (anamorphic prism) is a refractive element and not a reflective one. However, element 13 may be considered the OAE "surface" that comprises a "refractive or defractive element" which corresponds to claim 2. As for the argument, that element 15 (fixed mirror) is not adjustable, the examiner notes that Oono discloses in column 9, lines 40-42 that "the fixed mirror 15 is rotated in the direction of the arrow Cy." Thus, the examiner maintains that the combination of elements 13 (anamorphic

prism) and 15 (fixed mirror) read on the limitation "wherein the first OAE comprises two coupled, non-parallel, and non-coplanar surfaces in the first beam path, wherein at least one of the coupled, non-parallel, and non-co-planar surfaces include a reflective element." Thus, the examiner has considered the applicant's arguments in light of the amended claims and maintains the rejection.

In response to the examiner assertion that any optical system that includes a prism that may be adjusted will read on the claimed invention, the applicant requested under MPEP 2144.03 that the examiner cite references in support of his position that the combination of properties of the OAE as claimed is taught or suggest . The applicant notes that "a prism may have any combination of properties, including the number of surfaces in a beam path, whether each surface is reflective, refractive, or defractive, and how the prism affects a beam path based on its position in an optical device." The examiner acknowledges that "all types" of prism would not necessarily read on the applicant's optical alignment element (OAE). However, the examiner maintains that a "reflecting prism," such as an Abbe prism, right angle prism, a porro prism, a dove prism, an Amici prism, a penta prism, or a Leman-Springer prism would read on the applicant's optical alignment element (OAE). (See Hecht, Optics, pages 166-169.) As an example, the Abbe prism clearly shows "two coupled, non-parallel, and non-co-planar surfaces," "wherein at least one of the coupled non-parallel, and non-co-planar surfaces include a reflective element." The following is an example of how any optical system that includes a "reflecting" prism that may be adjusted will read on the claimed invention:

> Simply utilizing a light source such as a laser as a component in an optical system would read on the limitations (claim 1) "(a) placing at least a first optical element in a

first beam path; (b) fixing the first optical element in place without substantially compensating for errors in optical alignment. Placing a reflecting prism such as an Abbe prism after the laser would read on the limitation "(c) placing at least a first alignment element (OAE) in the first beam path." The placement or movement of the prism would read on the limitation "(d) aligning the first beam path to a first desired beam path by adjusting the first OAE, wherein the alignment of the first beam path substantially compensates for cumulative alignment errors in the first beam path." As noted above, a "reflecting type" prism reads on the structure of the OAE.

Further, Broche, et al (US 3,879,105) discloses an optical system that utilizes a porro prism which is displaceable in four degrees of freedom.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-83 and 88 are rejected under 35 U.S.C. 102(b) as being anticipated by Oono, et al. (US 5,223,970).

The examiner notes that any optical system that includes a "reflecting type" prism that may be adjusted will read on the claimed invention. In other words, an optical system including any type of optical element in conjunction with a prism that may be adjusted will inherently teach the claimed invention of "(a) placing at least a first optical

element in a first beam path; (b) fixing the first optical element in place without substantially compensating for errors in optical alignment," (i.e., the optical element other than a prism in the system); "(c) placing at least a first optical alignment element (OAE) in the first beam path," (i.e., the prism); "and (d) aligning the first beam path to a first desired beam path by adjusting the first OAE (i.e., adjustment of the prism), wherein the alignment of the first beam path substantially compensates for cumulative alignment errors in the first beam path, wherein the first OAE comprises two coupled, non-parallel, and non-co-planer surfaces in the first beam path, wherein at least one of the coupled, non parallel, and non-co-planar surfaces includes a reflective element." (i.e., reflective type prism)

Regarding claims 1, 27, 31, 55, 59, 63 and 88, Oono discloses an adjustable prism (Fig. 3, ref.# 13, 15). Thus, Oono inherently discloses "a method for aligning a plurality of optical elements in an optical device, comprising the steps of: (a) placing at least a first optical element in a first beam path; (b) fixing the first optical element in place without substantially compensating for errors in optical alignment; (c) placing at least a first optical alignment element (OAE) in the first beam path; and (d) aligning the first beam path to a first desired beam path by adjusting the first OAE, wherein the alignment of the first beam path substantially compensates for cumulative alignment errors in the first beam path, wherein the alignment of the first beam path substantially compensates for cumulative alignment errors in the first beam path, wherein the first OAE comprises two coupled, non-parallel, and non-co-planer surfaces in the first beam path, wherein at least

one of the coupled, non parallel, and non-co-planar surfaces includes a reflective element."

Regarding claims 2, 32, 34 and 60, Oono discloses "wherein the first OAE comprises two coupled, non-parallel, and non-co-planar surfaces, wherein at least one of the surfaces comprises a refractive or defractive element." (Fig. 3, ref.# 13, 15)

Regarding claims 3, 33, 35 and 61, Oono discloses "wherein the first OAE comprises two coupled, non-parallel, and non-co-planar surfaces in the first beam path, wherein each of the two of the coupled, non-parallel, and non-co-planar surfaces include a reflective element." (Fig. 3, ref.# 15)

Regarding claims 4, 36, 37 and 62, Oono discloses "wherein the first optical element comprises one of the following: a lens; a mirror; a collimator; a laser; a detector; an optical fiber; a fiber collimator; a light emitting diode; a holographic element; an optical signal modulator; a thermoelectrically cooled laser a grating; and an array of optical devices. (Fig. 3, ref.# 11, 12)

Regarding claims 5, 8, 11, 14, 38, 41, 44, 64, 67 and 70, Oono discloses "wherein the first optical element is a first filter." (Fig. 23, ref.# 359, 365)

Regarding claims 6, 9, 12, 15, 39, 42, 45, 65, 68, and 71 Oono discloses "wherein the first filter is a first reflective notch filter." (Fig. 23, ref.# 359, 365)

Regarding claims 7, 31, 59 and 63, Oono discloses "(a1) placing at least a second optical element in a second beam path; (b1) fixing the second optical element in place without substantially compensating for errors in optical alignment ; (c1) placing at least a second OAE in the second beam path; and (d1) aligning the second beam path to a

second desired beam path by adjusting the second OAE, wherein the alignment of the second beam path substantially compensates for cumulative alignment errors in the second beam path." (i.e., Fig. 3, ref.# 15 represents a second OAE in a second optical path with ref.# 13 representing a first OAE in a first optical path)

Regarding claims 10, 40 and 66, Oono discloses "(a2) placing at least a third optical element in a third beam path; (b2) fixing the third optical element in place without substantially compensating for errors in optical alignment ; (c2) placing at least a third OAE in the third beam path; and (d2) aligning the third beam path to a third desired beam path by adjusting the third OAE, wherein the alignment of the third beam path substantially compensates for cumulative alignment errors in the third beam path." (i.e., Fig. 3, ref.# 20 represents a third OAE)

Regarding claims 13, 43 and 69, Oono discloses "(a3) placing at least a fourth optical element in a fourth beam path; (b3) fixing the fourth optical element in place without substantially compensating for errors in optical alignment ; (c3) placing at least a fourth OAE in the fourth beam path; and (d3) aligning the fourth beam path to a fourth desired beam path by adjusting the fourth OAE, wherein the alignment of the fourth beam path substantially compensates for cumulative alignment errors in the fourth beam path." (Fig. 23, ref.# 15, represents a fourth OAE)

Regarding claims 16, 46 and 72, Oono discloses "wherein the adjusting step (d) comprises: (d1) selecting values for a plurality of parameters; (d2) adjusting a placement and an orientation of the first OAE in the first beam path along a plurality of axes; (d3) determining a power level for the first beam path at a location; and (d4) repeating steps

(d2) and (d3) if the power level for the first beam path is not approximately a desired power level." (i.e., the claimed adjusting step is inherent in the alignment of the optical system of Oono.)

Regarding claims 17, 46 and 72, Oono discloses "(d2i) adjusting a placement and an orientation of a second OAE in a second beam path along the plurality of axes; (d3i) determining a power level for the second beam path at the location; and (d4i) repeating steps (d2i) and (d3i) if the power level for the second beam path is not approximately a desired power level." (i.e., the claimed adjusting step is inherent in the alignment of the optical system of Oono.)

Regarding claims 18, 47 and 73, Oono discloses "(d2ii) adjusting a placement and an orientation of a third OAE in a third beam path along the plurality of axes; (d3ii) determining a power level for the third beam path at the location; and (d4ii) repeating steps (d2ii) and (d3ii) if the power level for the third beam path is not approximately a desired power level." (i.e., the claimed adjusting step is inherent in the alignment of the optical system of Oono.)

Regarding claims 19, 48 and 74, Oono discloses "(d2iii) adjusting a placement and an orientation of a fourth OAE in a fourth beam path along the plurality of axes; (d3iii) determining a power level for the fourth beam path at the location; and (d4iii) repeating steps (d2iii) and (d3iii) if the power level for the fourth beam path is not approximately a desired power level." (i.e., the claimed adjusting step is inherent in the alignment of the optical system of Oono.)

Regarding claims 20-26, 49-55 and 75-80, Oono discloses "(e) fixing the first OAE in the first beam path in place" via an epoxy, welding or soldering. (i.e., it is inherent that each optical element such as the prism ref.# 15 in Oono would be "fixed in position" after it has been adjusted, and it fixing the element via an epoxy, welding or soldering is common knowledge in the art.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 89 and 90 rejected under 35 U.S.C. 103(a) as being unpatentable over Oono, et al. (US 5,223,970).

Oono discloses all the structures set forth in the claims, except that the optical device is "multi-channel" that includes (claim 89) "a plurality of channels" and (claim 90) "(e) placing at least a second optical element in a second beam path, wherein at least another one of the plurality of channels traverse the second beam path; (f) fixing the second optical element in place without substantially compensating for errors in optical alignment; (g) placing at least a second OAE in the second beam path; and (h) aligning the second beam path to a second desired beam path by adjusting the second OAE, wherein the alignment of the second beam path substantially compensates for cumulative

alignment errors in the second beam path." In other words, claims 89 and 90 are directed to an apparatus where there is more than one beam path utilizing an optical alignment element (OAE) in each path. It would have been obvious to on having ordinary skill in the art at the time the invention as made to utilize the claimed optical alignment element in different paths of a multi-channel optical device, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Conclusion

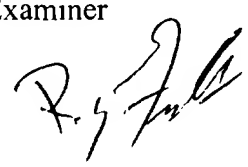
5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney Fuller whose telephone number is (703) 306-5641. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams, can be reached on (703) 308-2847.

Rodney Fuller
Primary Examiner



July 9, 2003